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Data marts: A key to reviving the enterprise data warehouse

HP Chronicle; Austin; Oct 1998; Rob Rose;

Volume:

15

Issue: Start Page: 11 1, 18

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Data warehouses

Systems design

Information management

Advantages Customization

Geographic Names: United States

US

Abstract:

The enterprise data warehouse was intended to be the cornerstone of an organization's business intelligence strategy. In practice, the traditional enterprise data warehouse has proven slow and costly to build. Organizations are turning to data marts as their primary business intelligence storehouse. Data marts are streamlined, highly focused, smaller scale versions of the enterprise data warehouse.

Full Text:

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Have delays in implementing an enterprise data wareouse out your business at a competitive disadvantage? Managers today can't run a business blind. They need information (business intelligence) about the company, customers, competitors, markets, and more, and they need it quickly and easily. The enterprise data warehouse was intended to be the cornerstone of an organization's business intelligence strategy, promising business intelligence on demand.

The enterprise data warehouse (the storehouse where all manner of information from a wide range of sources is collected and made available to users enterprise-wide) sounds like the ideal solution for business intelligence. But the reality is often quite different. In practice, the traditional enterprise data warehouse has proven slow and costly to build.

With implementations taking two, three or more years and costing millions of dollars, the payoff from the enterprise data warehouse is pushed too far into the future. Business managers who need business intelligence now have been forced to wait, missing opportunities in the meantime.

In addition, some business managers have raised concerns about the nature of the information ultimately delivered by large, traditional enterprise data warehouses. In an attempt to make the data warehouse serve the broadest number of users, organizations fill it with general data of the lowest common denominator. This general information, however, is unsuited for the ambitious business intelligence efforts required for success in today's business environment.

Instead, business managers need specific quality information now if they are to pursue the kind of business intelligence initiatives that translate into competitive and strategic advantages. This information fuels a wide range

of information-based management strategies, including business intelligence, comprised of decision support, online analytical processing (OLAP) and data mining. Business intelligence is where most businesses receive their return on investment from their data warehouses.

For example, managers need to view sales by product and region and make correlations with advertising campaigns and marketing promotions. Or, they want to analyze groups of customers and purchases and identify relevant patterns. All areas of the organization; such as finance, sales, marketing, purchasing, production, customer service and human relations, are ripe for business intelligence initiatives. The opportunities for valuable information analysis are endless.

Given the urgency of the need and the disappointment with conventional enterprise data warehouses, organizations are turning to data marts as their primary business intelligence storehouse. Think of a marketplace where small shops specialize in particular products versus a warehouse club which seems to carry everything but often doesn't have an extensive inventory of any particular item or even a wide variety of different brand names. Data marts are streamlined, highly focused, smaller scale versions of the enterprise data warehouse. Data marts. unlike their larger enterprise cousins, don't try to be all things to all people. Instead of delivering lowest common denominator information, they provide detailed information focused on a single area, such as marketing, sales, production or finance. Packed with information critical to the particular area of interest, data marts give managers in each area access to the kind of specific data that is not readily available in an enterprise data warehouse.

Compared to the conventional enterprise data warehouse, data marts are faster, easier and less expensive to build, due to the use of low cost, readily available, offthe-shelf products. For example, data marts typically are built on PC servers, like the HP NetServer line, running operating systems such as Windows NT, and they use flexible relational databases, like SQL Server. Business managers access, view, and slice-and-dice data from the data mart through easy-to-use desktop tools, such as Cognos' Impromptu or PowerPlay or through the Web-enabled. zero-client versions of the same software.

The end result is an information storehouse that can be delivered easily, inexpensively and quickly, in weeks or months. The data mart provides access to critical data sooner than the enterprise data warehouse, allowing business managers to initiate business intelligence strategies and reap the rewards sooner. The payback comes not years down the road but within months, with many companies achieving valuable results in 90 daYs.

Given the speed, ease-of-use, low cost and high payback of data marts, the idea quickly spreads throughout an organization, with each functional area putting up a data mart of its own. The result amounts to a virtual enterprise data warehouse (albeit one which actually contains the special information necessary to informed decision making) with each individual data mart maintaining its specialized information. The success of data marts and their proliferation throughout the enterprise is leading many organizations to reconsider the role and definition of the conventional enterprise data warehouse and the relationship between data marts and data warehouses.

Despite their proven effectiveness, however, data marts won't replace enterprise data warehouses. Instead. Gartner Group, in a 1997 report, discusses data marts as a valuable subset of the enterprise data warehouse. Organizations will adopt both data marts and data warehouses, using them in several complementary ways.

For instance, the development of multiple data marts can become a stepping stone to an enterprise data warehouse. While linking multiple data marts to form a seamless virtual enterprise data warehouse still presents some technical challenges, the information modeling, transformation and data organization embodied in the data marts, at the least, can provide a powerful jump start for the building of an enterprise data warehouse.

While many conventional enterprise data warehouses have failed to fulfill the promise of business intelligence on demand, the data mart has emerged as a practical alternative within the reach of any organization today.

Through the success of the data mart, organizations will evolve a new enterprise data warehouse This new breed of data warehouse will join the IS organization, as manager of the data warehouse, and business users, as the consumers of business intelligence provided through specific data marts, in a cooperative effort where data warehouses and data marts complement each other to deliver business intelligence.

[Author note]

Rob Rose is vice president of product marketing for @Cognos. For information about @Cognos see www.cognos.com.

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	<u>Today's News; [3]</u> ; American Banker , New York, N.Y.; Dec 22, 1998; Vol. 163, Iss. 243; pg. 1
<u> </u>	Business Objects Announces Certification to SAP Business Information Warehouse; Business Editors/Computer Writers; Business Wire, New York; Dec 22, 1998; pg. 1
☐ 14. ☐ ☐	<u>Datawatch and Adesso Software Announce OEM Relationship</u> ; <i>Business/Technology Editors</i> ; Business Wire , New York; Dec 22, 1998; pg. 1
☐ 15. m 🗎 @	Study: Information hard to come by; Anonymous; Computerworld, Framingham; Dec 21, 1998; Vol. 32, Iss. 51; pg. 64, 1 pgs
16. n 🕞 🕏	Post-Y2K productivity to jump; Anonymous; InformationWeek, Manhasset; Dec 21-Dec 28, 1998, Iss. 714; pg. 119, 1 pgs
☐ 17. B 🖺	India: Call to revamp database management; Businessline, Islamabad; Dec 18, 1998; pg. 1
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Data Talk

Dataguest; New Delhi; Dec 15, 1998;

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Abstract:

Isn't this space being invaded by high-end PC-servers? Yes, it has to some extent. However, the biggest disadvantage with the high-end PC servers is that they don't scale too well. Yes, you can definitely do clustering with these servers, but what our customers are finding is that clusters of PC servers are tougher to manage. Five or six NT servers together in a cluster, that forms the basis of any application are not as easy to manage as compared to a single AS/400 server. The AS/400 was designed for nothing else, but doing business. We are finding that customers are looking for better system management capabilities, easy to use and above all low Total Cost of Ownership (TCO). And when you put the AS/400 in this model, it is the lowest TCO system because it requires the least amount of technical expertise to run. TCO would encompass hardware cost, typically around 20-25% of total cost, and the balance cost is on the personnel, which is easy to manage. That's where people are starting to realize the AS/400 as a benefit.

Moreover, AS/400 can run both NT and Unix application. We run NT on an ①Intel-based server, running under the cover of AS/400. With the help of the integrated PC-server, we can run NT-based applications and OS/400-based application on the same AS/400. We can share data back and forth from the NT server to the AS/400 server. One can have 16 NT servers under the cover of a single AS/400. This is what I imply by low TCO of AS/400. For instance a single command of `Backup' will back up my AS/400 and my NT data. Thus the second part of TCO is of personnel usage is very low for the AS/400 platforms. The AS/400 is the lowest TCO system available in the market.

With hundreds of people working on Linux, do you think that it is only a matter of time before a strong competition emerges in the 64- bit space? Again it depends. I don't think Linux runs on AS/400 but runs only on ①Intel chips. But here our advantage is based on two things. Firstly, whether the applications that are already running on current OSs and processors can be ported to Linux and, second, is our Java initiative. Now if Java delivers on its promise, then it doesn't matter which OS you have. It will not matter if your OS is Linux, OS2 or Windows. The whole thing will become a Java application. So as long as you have Java and as long as Java application can run anywhere, you have defined openness. The capability for us to grow in future is by having all these Java- based applications and then the OS is not the issue, but the real issue would be lower TCO. This is the key strength of the AS/400 and our goal is to continue our TCO advantage by making it much easier-to- run applications on the AS/400 than any other platform.

Full Text:

"The AS/400 is the lowest TCO system available in the market." -Denise F Buonaiuto, VP (AS/400 Worldwide System Sales), @IBM.

It has been a long journey, nearly a quarter of a century, for Denise F Buonaiuto to her current job as VP of the AS/400 Worldwide System Sales division at ①IBM. A product of the University of Rhode Island, Buonaiuto joined Big Blue as a marketing trainee in 1974 and has since held various positions in the organization. On her recent visit to evangelize AS/400 in India, she managed to spend some time with DATAQUEST to deliberate on the various issues about the server. Excerpts: How has ②IBM positioned the AS/400 platform in its product space.

Is there a clear differentiator with the RS/6000 platform? Broadly, we have segmented our product range into four services.

On the top of the ladder is our large systems division, S/390, catering to large banks and manufacturing organizations. Again, it is easy and simple to segment the other end of the ladder, the NT servers, which look after the need of small businesses. Of the other two services, the AS/400 and RS/6000 do overlap to some extent in the mid-range space. Of course, we differentiate between these two platforms based on applications. For instance, we don't do engineering scientific computing or CAD/CAM-based applications on the AS/400. We leave that for the RS/6000. Where we have positioned AS/400 very well is the small and medium businesses, which want to run their business and not their computers. This segmentation is further facilitated by the second factor. The AS/400 has an integrated architecture and we have integrated an OS, database, security and communication and then we work with our solutions providers to provide the applications. So in spite of the overlap, we are very clear of the market area each platform focuses on.

But, isn't this space being invaded by high-end PC-servers? Yes, it has to some extent. However, the biggest disadvantage with the high-end PC servers is that they don't scale too well. Yes, you can definitely do clustering with these servers, but what our customers are finding is that clusters of PC servers are tougher to manage. Five or six NT servers together in a cluster, that forms the basis of any application are not as easy to manage as compared to a single AS/400 server. The AS/400 was designed for nothing else, but doing business. We are finding that customers are looking for better system management capabilities, easy to use and above all low Total Cost of Ownership (TCO). And when you put the AS/400 in this model, it is the lowest TCO system because it requires the least amount of technical expertise to run. TCO would encompass hardware cost, typically around 20-25% of total cost, and the balance cost is on the personnel, which is easy to manage. That's where people are starting to realize the AS/400 as a benefit.

With limited applications, the TCO of a AS/400 should be high and not low?

No, actually not. We have tons of applications for the AS/400. But I do agree that people choose the application before thinking of the technology and this is a gray area for us. We are making considerable investment in Domino and Java to overcome these limited problems. Adopting 100% Java will open up a realm of applications for the AS/400, not necessarily written for the AS/400 but easily used on the AS/400. We can combine Java applications with this low TCO system to have a differentiated advantage in the market.

Moreover, AS/400 can run both NT and Unix application. We run NT on an ①Intel-based server, running under the cover of AS/400. With the help of the integrated PC-server, we can run NT-based applications and OS/400-based application on the same AS/400. We can share data back and forth from the NT server to the AS/400 server. One can have 16 NT servers under the cover of a single AS/400. This is what I imply by low TCO of AS/400. For instance a single command of `Backup' will back up my AS/400 and my NT data. Thus the second part of TCO is of personnel usage is very low for the AS/400 platforms. The AS/400 is the lowest TCO system available in the market.

Does AS/400 support a centralized computing type of environment like online, real-time applications, or are there some limitations? No limitations at all. In fact, that's been our strength. Our strength has been to provide a large system centrally and then have clients anywhere in the world and network them together. Actually, we are seeing a change in the way people are doing business.

Initially, the spread of mainframes and minis, coupled with high communication cost, saw the advent of distributed computing. Now we are seeing another swing of the pendulum back to more centralized computing and consolidation of service. Moreover, I think that TCO is again driving this consolidation. It's expensive to manage these little servers in remote locations. TCO would increase if one considers availability of technical team at such locations, back up problems and other related problem with remote management. Like many other platforms, AS/400 offers excellent remote diagnostic capabilities for remote systems management. It is a plain common sense that it is easier to manage one of anything than 100 of anything. So as people move on with their business, they are also looking at doing their business in the most cost-effective manner. Is there any limitation with respect to ecommerce solutions and AS/400?

Absolutely not. In fact, this is one area where the small and medium businesses have a level playing field. In the US, Pacific Brokerage, a small telephonic brokerage firm, moved over to web- based trading within two weeks on the AS/400. This is no mean achievement as it usually takes around three to six months for an operation of similar size. The result: they grew their business by 70% within six months such that a bigger brokerage house looked at their internet- based computing capability as a competitive advantage and acquired this company. There is no limitation of the AS/400 capability in e- business environment.

Actually, I think that this platform has many strengths and lends itself to the e-business environment. The AS/400 system is considered as a very secure, reliable and very scalable system. For instance, we have a notes benchmark, certified by Lotus Corp, that you can put 10,400 Domino users on a single AS/400 server doing email with sub- second response time. So the traditional strength of AS/400 of reliability, security, scalability and services are all the same thing that one needs when you bring your business on the web.

Moreover, the moment you put your business on the web, the business better be up on the web 24 hours, seven days a week.

Assuming that we already have an AS/400 installed in our company and plan to deploy an ecommerce application, what would be the additional hardware requirement?

Nothing. Of course, it would depend on the how you want to implement the ecommerce applications. May be, you might have to upgrade your OS from version 3.7 to version 4.3. We continue to improve our e-business and ecommerce capability in each of our subsequent version. So the more current you are, the better your functionality can be. Then you can use tools from ①IBM or other solution providers. For example, the net.commerce initiative from ①IBM. Net.commerce is a framework for customers to build capabilities to do business on the web. However, for document-based capabilities, Domino would be a better option to do e-business.

How does the AS/400 product range scale from low-end to high-end? At the lowest end of the spectrum is the model 150. This system is very small and may cater to around 10-20 users. But we can grow this system, from 150, all the way up to our largest 12-way model 650 and this growth is around 330 times in capability terms. Moreover, from the 600 to 650 models, the growth can be incorporated in the same box. However from the 150 box one would need to change boxes to scale to the higher 600 series. But we would look into many issues before advising our customer on the server type to invest in. We would look at issues like type of data storage, type of transaction per second/per minute/per hour, **datamining**, operational transactions and then recommend a particular type of platform. We would look at the growth of business and if we recommend a low-end 170, the customer can grow up to 30 times scaling to the high-end 170.

Which are the focus industries for the AS/400 application platform?

We are focusing on five key industries: distribution, industrial manufacturing, banking and finance, insurance and telecommunications. These five segments represent nearly 80% of AS/400 business. Of course it doesn't imply that we are not into health and other industries but these five industries are very important in our business plans.

A highlight of the AS/400 system has been its 64-bit computing capability. Do you see ①Intel's 64-bit Merced initiative and Linux OS combine creating the same problems for the AS/400 as the Wintel combine did in the PC market? Well it depends. It remains to be seen what they will actually deliver of the 64. They would need a 64-bit OS and right now in the ①Intel space there are no 64-bit OSs. However, we are already on our fourth-generation 64-bit bit OS processing environment. Again, we think we have a strategic advantage because the AS/400 was build for 128-bit address. So architecturally, its not a 64-bit OS but a 128-bit OS, implemented on a 64-bit space. So we think there will always be a competition but it will take time for the other vendors to catch up to 64 bit. By this time, we would have outpaced them with our capability of being able to move to bigger and better computing scales.

With the PC-server market moving upward with <u>①Intel</u>'s Merced and Linux combination and also Unix servers coming down, again with Linux's help, do you see AS/400 getting squeezed in between them? Well, there is always going to be competition and new competition too will emerge now and then. However, it is our capability to

respond to the competition and keep of products moving in the direction we want. Everybody told us that when Unix came out, the AS/400 was doomed. Then when NT came out, people told me to look for a new job. That has not happened, and we are still in business. I am not saying that these are not competitive threats and I treat each and every one very seriously as a competitive threat to my product. Moreover, we still have our competitive advantage of the 128-bit address capability of AS/400. What this implies is that if a user has to move to higher operating technologies, he does not have to change a single line of code. So far, nobody in the business has been able to say this and it remains to be seen whether Merced will allow this or not. So, if people are thinking of 64bit, we are already 'old.' We are already done with 64 bit and are moving to higher things. So, if your OS does not handle the next generation, somebody will have to do a whole lot of rewriting in the existing OS. We are pretty confident that we have a platform that will grow into the future, no matter what kind of technologies comes our way.

With the latest ①IBM initiatives on the standardization of Unix, do you foresee the gradual shift of AS/400 and other ②IBM products to Unix? I see ①IBM commitment to its four server platforms-S/390s, RS/6000s, AS/400s and PCs. What I do understand about the SCO-①IBM Unix initiative is that ①IBM can provide affordable Unix in the ①Intel space. But we are fully committed to the PowerPC architecture at the high-end RISC 6000 product line and yet we are going to author the alternative of the ①Intel-based 64-bit computing at the lower end of the market. This stems from our understanding that customers want choice to determine what they can do. So we are just providing alternatives to our customers, but this would not imply that we are not committed to other platforms like NT or our own OS.

Can you elaborate on the Java initiatives like the San Francisco initiative and how is it related with the AS/400?

Firstly, what we did with Java, was instead of using the Java virtual machine above the OS as an application, we embedded in into the OS. So the first initiative is that by creating a virtual machine as part of the OS we will get better performance in the long run as customer do multi-credit job and complex Java-based applications. Today, many people are using client applets and simple Java because the performance at the server level is not what it needs to be for heavy-duty Java-based transactions. By putting it into the OS, we think that we will be able to make it a high-performing Java server. Secondly, we are working with all the Java providers. We are stepping out of the traditional AS/400 space and working with tool and middleware providers that were not necessarily known to the AS/400 in the past, but will now have AS/400 capability. We hope this will ensure our competitive edge in the uncertain future.

YOGRAJ VERMA and A	ARUN SHANK	AR in New Delhi.			

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QueryObject Appoints New Sales Executives for North America and Europe

Business Wire; New York; Dec 14, 1998; Business/Technology Editors;

NAICS:7372

Start Page:

1

Subject Terms:

Software industry

Executives

Appointments & personnel changes

Geographic Names: Uniondale

NY US

Middle Atlantic

Personal Names:

Tague, James

Companies:

QueryObject Systems Corp NAICS:7372

Abstract:

Dec. 14, 1998-- QueryObject Systems Corporation (NASDAQ:QUOB) today announced the appointment of James Tague, formerly a regional sales director of Evolutionary Technology Incorporated (©ETI) as Vice President of North American Sales and confirmed the appointment of Jonathan Saunders, who joined the company 18 months ago from Thinking Machines, as Managing Director, European Operations.

"Jim and Jon both have a great deal of sales and distribution experience in their respective markets," said Robert Thompson, Chief Executive Officer. "They are strong complements to the other members of the management team: Daniel Pess, Chief Operating Officer and Chief Financial Officer; Andre Szykier, Founder and Chief Technology Officer; Matthew Doering, Vice President Product Marketing; Thom Siragusa, Vice President Professional Services; Piotr Parlewicz, Director of Research and Development; and Donald Mead, Director of Engineering."

The QueryObject System allows users to rapidly analyze very large volumes of complex business data by easily transforming it into a compact, highly distributable analytical object - a
①QueryObject - that can be analyzed using industry standard tools and techniques. The System produces an analytical data mart that uniquely represents complex data relationships through polynomial equations. This resulting ①QueryObject is a mathematical index of all the relevant dimensions and metrics, including direct keys back to the source data.

Full Text:

Copyright Business Wire Dec 14, 1998

James Tague, formerly a regional sale director of Evolutionary Technology Incorporated (©<u>ETI</u>) as Vice President of North American Sales and confirmed the appointment of Jonathan Saunders, who joined the company 18 months ago from Thinking Machines, as Managing Director, European Operations.

"Jim and Jon both have a great deal of sales and distribution experience in their respective markets," said Robert Thompson, Chief Executive Officer. "They are strong complements to the other members of the management team: Daniel Pess, Chief Operating Officer and Chief Financial Officer; Andre Szykier, Founder and Chief Technology Officer; Matthew Doering, Vice President Product Marketing; Thom Siragusa, Vice President Professional Services; Piotr Parlewicz, Director of Research and Development; and Donald Mead, Director of Engineering."

Joining James Tague on the North American Sales team are two new hires: James Pingatore, formerly of telecom application vendor System Management Arts, as Director, Telecommunications Market; and Gerald Hasty, recently of data extraction software vendor ©ETI, as Director, Financial Services Market.

"I consider recruiting Jim and Gerry a real coup," added Thompson. "They both have extensive track records in their sector and will provide a real boost to the sales organization. Their eagerness to join <u>@QueryObject Systems</u> is testament to the growing acknowledgement that our products are setting new performance standards for analytical reporting environments for data intensive industries such as telecommunications, financial services and retail." About The QueryObject System

The QueryObject System allows users to rapidly analyze very large volumes of complex business data by easily transforming it into a compact, highly distributable analytical object - a QueryObject - that can be analyzed using industry standard tools and techniques. The System produces an analytical data mart that uniquely represents complex data relationships through polynomial equations. This resulting QueryObject is a mathematical index of all the relevant dimensions and metrics, including direct keys back to the source data.

The System provides a potentially high number of concurrent users with efficient and responsive access to higher information volumes than is available in traditional data marts, while maintaining a proportionally smaller, easier to distribute, footprint. The polymorphic nature of the QueryObject schema allows simultaneous access - through an ODBC and OLE/DB interface - with most industry-standard analytical tools and techniques including spreadsheets, ad hoc queries, multidimensional analysis and **data mining**.

The QueryObject System engine, which transforms relational or flat-file data into QueryObjects, runs on MVS, UNIX and NT servers. QueryObject data marts are then distributed to desktop or laptop clients, or UNIX or NT LAN and Web servers, for user analysis. Pricing for the engine, regardless of the number of users, ranges from \$50,000 to \$275,000 depending on platform. About @QueryObject Systems Corporation

©QueryObject Systems Corporation is a publicly held company headquartered in Uniondale, New York, USA and with a wholly owned European subsidiary headquartered in the United Kingdom.

For more information about QueryObject System Corporation and its technologies, visit the Web site at http://www.queryobject.com.

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This press release contains certain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, which are intended to be covered by the safe harbors created hereby. Investors are cautioned that all forward-looking statements involve risks and uncertainty, including without limitation, the Company's development as a software products company, and the ability of certain partnerships to aid in that growth; the capability of the company's products to perform as optimized analytical data marts; and the ability of the company's products to support the performance of other business intelligence tools. Although the Company believes that the assumptions underlying the forward-looking statements contained herein are reasonable, any of the assumptions could be inaccurate, and therefore, there can be no assurance that the forward-looking statements included in this press release will prove to be accurate. In light of the significant uncertainties inherent in the forward-looking states included herein, the inclusion of such information should not be regarded as a representation by the Company or any other person that the objectives and plans of the Company will be achieved. SEQN: BW1016

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Compression Sciences and Servlet Inc. Launch High Performance E-Commerce Solutions

PR Newswire; New York; Dec 14, 1998;

Start Page: 1

Dateline: Massachusetts, England

Abstract:

BOSTON, Dec. 14 /PRNewswire/ -- Compression Sciences (a subsidiary of Gentia Software {Nasdaq: GNTIY} today announced the partnership with Servlet Inc. (Menlo Park, CA) to jointly develop, license and market Java Servlet technology to integrate the K.wiz(TM) Knowledge Discovery Framework with e-commerce applications.

Servlet has combined state-of-the-art security procedures, routing technology, and proxy technology implemented in Java to yield an advanced networking API for use in business applications. This technology is called Alambre and it forms the core of the Servlet product offerings.

K.wiz, wholly developed in Java, can be deployed on any compatible browser, client or server. K.wiz incorporates a patented compression technology and a unique component distribution scheme means it is scalable to the biggest e-commerce databases. K.wiz has been designed to be embedded into e-commerce implementations, databases and operating systems -- getting the knowledge discovery function as close as possible to the point of transaction.

Full Text:

Copyright PR Newswire - NY Dec 14, 1998

Industry: COMPUTER/ELECTRONICS

Companies Announce Joint Development, Support and Licensing to Connect K.Wiz

Data Mining To E-Commerce

BOSTON, Dec. 14 /PRNewswire/ -- Compression Sciences (a subsidiary of Gentia Software {Nasdaq: GNTIY} today announced the partnership with Servlet Inc. (Menlo Park, CA) to jointly develop, license and market Java Servlet technology to integrate the K.wiz(TM) Knowledge Discovery Framework with e-commerce applications.

Servlet has combined state-of-the-art security procedures, routing technology, and proxy technology implemented in Java to yield an advanced networking API for use in business applications. This technology is called Alambre and it forms the core of the Servlet product offerings.

K.wiz delivers to the market Knowledge Discovery functionality that can easily be embedded at the heart of data creation, handling and storage: for example, as a function within the database, as a service on the Web or at the transaction point in an E-commerce application.

Through the Java platform and the flexible component design of K.wiz it will be possible to upload and execute **data mining** components into e-commerce applications at the point of transaction, to select and filter data and to gain insight for immediate and appropriate marketing or cross-selling opportunities.

Through their compatible architectures and products the two companies will use the Servlet interface in Web servers to achieve high performance and robust solutions for e-commerce applications.

The K.wiz and Alambre frameworks bring **Data Mining** and Knowledge Discovery functionality to the heart of the e-commerce session.

The new technology will enable businesses to provide direct one-to-one marketing and cross-selling opportunities to their customers, and consumers will benefit from efficient supplier sites, a wider range of goods and services, and very often, lower prices.

"The embracing of the Internet, in homes and businesses, and enabling technologies such as Java, provides the opportunity of The Intelligent Transaction for the first time," said lan Rawlings, managing director at Compression Sciences. "While the supplier may know much more about the consumer, used correctly this information will enable him to provide a more dynamic directed service. The consumer should soon enjoy a more efficient and cost effective transaction with their supplier."

K.wiz, wholly developed in Java, can be deployed on any compatible browser, client or server. K.wiz incorporates a patented compression technology and a unique component distribution scheme means it is scalable to the biggest e-commerce databases. K.wiz has been designed to be embedded into e-commerce implementations, databases and operating systems -- getting the knowledge discovery function as close as possible to the point of transaction.

K.wiz is entirely written in Java and is already compatible with today's Java 1.2 platform. Alambre has been used as the basis for two applications which were certified 100% Pure Java by ©Sun Microsystems.

The software can be used by ISVs to build analytical applications and is expected to be incorporated into many data warehousing, business intelligence and e-commerce solutions.

Unlike traditional **data mining** solutions, K.wiz has been designed for the application developer by allowing access to every function of the product through programmable APIs. Entirely Java-based, it handles both multi-platform and distributed client/server environments.

The key benefits of K.wiz for ISV developers include:

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-- Ease of deployment @DW ETBL$
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K.wiz runs across all common business environments for ease of use. By

including advanced communications, models and results can be easily

distributed across a network or intranet.

-- Automated processes Common processes, such as data @DW ETBL\$

preparation, can

be grouped together for re-use into a user-defined custom component that

can be leveraged by all K.wiz users, enabling higher productivity for

ISVs.

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-- APIs
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The product has been developed with ISVs in mind. It takes a modular

approach, using APIs to allow access to all relevant parameters and K.wiz

functionality.

-- Scalability
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K.wiz is designed to avoid traditional data mining problems, where

applications do not scale to department or enterprise level. By

incorporating patented Array Indexing & Minimum Entropy Database (AIMED)

technology in its cache and K.wiz/ADB (Accelerated Database) in its

Knowledge Mart, data volumes are small and access times are kept to a

minimum.

Additional Information

Compression Sciences (a subsidiary of Gentia Software {Nasdaq: GNTIY}) is a specialist in knowledge discovery solutions. Founded in 1996 and with offices in Ipswich and in Boston, MA, its aim is to enhance business efficiency by automating the on-line delivery of information discovered from massive databases.

Compression Sciences' principal product, K.wiz, is a fully integrated solution designed to provide business end users with powerful analysis capabilities. K.wiz can be delivered through host applications, offering the end user **data mining** functions with no need to learn specialist applications. Unlike traditional solutions, K.wiz has been designed for Web deployment, enabling easy distribution to large numbers of users.

The key spokesman for the company is Ian Rawlings, managing director. He has over 15 years experience in the field of management techniques, including a commercial background in the development of data warehousing and OLAP systems.

Founded in 1997, Servlet Inc. is a privately held company focused on the development, marketing, and sales of Internet products harnessing the power and user-benefits of Java. Servlet's immediate suite of development innovation is in the area of Internet connection gateways, and virtual private networks (VPN).

The key spokesman for Servlet is Mike Harding, Chief Technology Officer. He is the principal architect of the company's core technology. Mike gained experience in developing and evaluating technologies as an engineer with ©Sun Microsystems. SOURCE Compression Sciences Ltd.

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Data mining

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A specialty wine cataloger wants to offer members of the Monthly Wine Tasters Club a discount on three wines that might appeal most to them based on their past purchases; an insurance company wants to send appropriate prospect letters to customers who would be most interested in its services; a cable provider wants to send "free movie" coupons to those customers most likely to convert to frequent pay-per-view customers. In all of these scenarios, a data-mining tool helps these companies sift through mounds of data to discover customers with the greatest propensity to purchase products and services.

Describing the "Data Mining" Process

Simply put, **data mining** is the search for usable knowledge extracted from large amounts of data. Often, it is described as an iterative, yet automated process by which patterns are found within a database.

Generally a variety of algorithms (step-by-step procedures used to solve mathematical problems) are put to task to find high correlations among customers or information about customers in a database. Many common techniques automatically repeat the training (learning) process several times in order to find the best combination of parameters or algorithms to solve a problem. There is a plethora of approaches to the data-mining process. However, in the end, they all produce a set of mathematical equations, or set of instructions or steps, which are used to score a customer database. (A score is a means of expressing quality in comparison to a standard. It can either be numerical-such as "100"-or alphabetical, e.g., "A".)

Sometimes, a supervised learning approach is used. In this case, the user must designate a dependent variable to be modeled. For example, if you were sending out a new Spring catalog and you wanted to mail it to all of your best prospects in the first run, you might define your dependent variable as "all customers who have a high propensity to spend \$200 or more." Next, you would extract examples of people who have purchased \$200 or more in the past from a similar catalog as well as people who had a chance to purchase that much, but did not. Then, you would analyze the other transactional and demographic data (independent variables) associated with all customers in order to learn the key differences between the patterns associated with the desired, as well as undesired behaviors. Once learned, those patterns, in the form of a model, are used to score other customers in the database for their propensity to spend or act in a similar fashion.

Sometimes, you need to create segments of customers based on a combination of factors. These might include demographics, lifestyles, and products purchased. You might choose to use an unsupervised approach to cluster or group together customers with similar characteristics. Unsupervised approaches don't have a defined goal, such as "find more customers like those that spent \$200 or more." Rather, these algorithms look through all the available data and form groups of customers with common characteristics.

After identifying similar customers, you will need to profile or describe the characteristics that are common to each group. Profiling includes calculating averages and looking at distributions for subsets of customers. This is particularly helpful when you are trying to craft offers that will appeal to different segments of customers. (For example, Segment A may have a high concentration of families with young children, and Segment B may be

primarily older, childless couples.)

So, **data mining**, in a nutshell, is the creative use of a variety of automated techniques to identify factors that can be acted upon to improve customer communication-and ultimately, the bottom line.

What are the ingredients for a successful implementation?

First and foremost, it's crucial to have a dedicated analyst who understands the database as well as the marketing department's objectives. Rare is the database that doesn't have hygiene issues (misspelled addresses, missing fields, incorrect data entry) or the right combination of transactional and demographic data. A good analyst will be able to communicate the needs of the marketing department while working with the Information Services department to resolve database format and content issues.

Secondly, the analyst needs a variety of tools to manage and extract data from the warehouse-as well as permission to write information back to the warehouse. OLAP (On Line Analytical Processing) tools-report writers and campaign management systems-need to be in place before you even consider a data-mining package. Why? Because you need a lot of data, often historical data, to achieve big gains in efficiency, and that kind of data needs to be managed by a carefully designed process. Additionally, what good is mining your database if you can't measure the effectiveness of your implementation?

Your database analyst will need a tool that's flexible and easy to use. The use of statistical methodology to decipher and predict is far from new to the scientific community. However, to the average marketer these concepts and tools are still a bit exotic. Fortunately, as personal computers become exponentially more powerful, marketers are able to explore larger customer databases at their desks-at lightning-fast speeds. What used to take three or four months and a team of statisticians can often be accomplished in a matter of weeks if not days. That's not to say that statisticians are no longer necessary. On the contrary, they are freer to do more extensive data exploration now that newer toolsets have automated some of the more mundane tasks involved in preprocessing the data or benchmarking various algorithmic approaches.

Evaluating a Data-Mining Tool?

There are many sites on the Web dedicated to evaluating data-mining tools. The following is a short list of some of the more important things to look for when you are purchasing a data-mining tool from the marketing analyst's point of view.

Data Management-You may have heard that getting the data ready to model often takes longer than the modeling process itself! Preprocessing is a vital component of data management, and it covers a variety of steps including the identification, selection, and transformation of the raw data from your data warehouse. Simply put, before you can mine your database, you need to identify and modify the variables that are going to be mined by the software package. For example, you may choose to eliminate things like "Customer I.D." or "Telephone Number," which may be assigned randomly and are not terribly predictive. Additionally, you may wish to create new variables such as "Average Purchases in the last 3 months" or "Total number of Calls to the Service Center." Or perhaps there are mistakes in the database and you need to reassign all customers labeled "A" with a "B." Flexibility is the key. Look for a software package that makes it easy to connect to the data warehouse, using ODBC (Open Database Connectivity) drivers as well as accepting a variety of formats such as .dbf, EXCEL, and SAS files. Also, make sure your chosen package allows the user to manipulate the data within the software. If the user has to go back to the data warehouse every time he or she wants to create a new expression, the whole exploration process quickly becomes drudgery.

Data Exploration-Before you can actually determine who your best customers are, you need to create some basic metrics to use as a rule of thumb. Exploration tools really help the analyst "get to know" the data, before and after modeling the data. Look for a software package that makes good use of graphics, offering a variety of pie charts, histograms, and scatter plots. Make sure the tool automatically shows the minimum, maximum, average, median, and mode of the numerical variables on the database. After coming up with an equation, make sure you can graphically depict the differences between customers with the highest scores and those with the lowest scores.

Data Mining Operations-Although there are a number of approaches, some of the most robust and expandable software combines a variety of techniques into a "suite" of resources. Incorporating known statistical methodologies, such as regression, alongside more advanced neural networks, genetic algorithms, and machine-learning algorithms, these toolsets use a variety of technologies to solve pattern recognition problems. The "best in breed" packages automatically benchmark the results from each of the techniques allowing the analyst to try and compare a variety of algorithms in an unbiased manner. Regardless of the techniques used to mine the data, look for software packages that easily help you set up the most common applications:

*Response Modeling-predicting future purchases of behavior from historical examples.

*Forecasting-estimating future purchauts or "lifetime value" given historical data.

- *Segmentation and Clustering-dividing customers into groups based on behaviors or demographics both manually, as well as through modeling.
- * Profiling-producing reports that describe the customers in your database by ratios, percentages, and degrees of propensity.

Interpretation of Results-Some tools produce fantastic results-but if the answers are not clearly related to solving a business problem, you will waste more time trying to explain the results to others. Look for software tools that produce reports that can be easily manipulated to demonstrate the business case. For example, you should be able to enter costs of a campaign in order to calculate your return on investment and break-even point. Additionally, you should be able to copy the graphics and reports easily into other business software, such as PowerPoint, for easy presentation.

Deployment-"Deployment" is the term used to describe the process of combining the efforts of all your mining activities and actually applying the resulting equation back to the database. The final output is generally a score. A score can be numerical on a graduated scale (100 = low propensity to purchase, 900 = high propensity to purchase), a segment (Segment 1 of 10 is the decile with the highest scores), or an alphabetical score representing various clusters (A, B, C, D, E customer types). Additionally, you may choose to output a "flag," which indicates that the customer's score or segment is one that is appropriate for action; i.e., "1" means telemarket to the customer, "0" means don't telemarket the customer. An open data-mining tool allows the analyst to actually output the resulting equation. It will also allow a variety of different deployment scenarios, such as outputting "C" code to be used on another machine, scoring to the local PC, or scoring on a variety of platforms through an additional exported program or through a client/server architecture.

There are lots of bells and whistles in the current crop of tools on the market, and some will undoubtedly be more appealing than others. Unfortunately, as advanced as these software packages are, they cannot run without the intervention of a human analyst. Therefore, the tool has to be fun to use. When you are looking at a software package that costs upwards of \$30,000 (and often much more than \$100,000), it's important to see your staff using the tool, eagerly anticipating "getting their hands on the data." You should be excited about your search for new revelations about your customers. In other words, don't buy a tool unless you are floored by the possibilities that exist in your database!

[Author note]

Wendy Cobrda is a Principal and Emissary of Catenate Consulting, a consortium of independent target marketing specialists. She can be reached at wendy@catenate.net (908-879-6797).